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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,372	07/18/2006	Tomoyuki Yasuda	25779K-033000US	2976

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EXAMINER	
MENDEZ, ZULMARIAM	
ART UNIT	**PAPER NUMBER**
1795	

MAIL DATE	DELIVERY MODE
06/17/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,372	YASUDA ET AL.	
	Examiner	Art Unit	
	ZULMARIAM MENDEZ	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/18/2006; 11/02/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-9 in the reply filed on February 24, 2010 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 2, and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masato (JP 3339792).

With regard to claims 1, 2 and 5-7, Masato discloses an electrode tool for electrochemical machining (see claim 1; page 2, paragraph 4) comprising: an electrode substrate (143c; figures 9 and 11) including a machining electrode surface (153a); a conductive pattern defined by a plurality of lands and grooves formed on the machining

electrode surface (153a; page 6, paragraphs 43-44); an insulating epoxy resin (143b) molded integrally with the electrode substrate and filled into the grooves of the conductive pattern (page 6, paragraph 43 to page 7, paragraph 46). Even though Masato fails to explicitly teach wherein the lands define a surface that is below a surface of the insulating resin and a height difference between the surface of the conductive pattern and the surface of the insulating resin between 1 and 5 micrometers, Masato teaches wherein the lands define a surface of the conductive pattern (153a) creating a height difference from the surface of the insulating resin (143b) filled into the grooves of the electrode substrate (143c; see figure 11; page 7, paragraphs 45-48), wherein the grooves formed on the electrode tool (143) are coated with an insulating epoxy resin (143b; page 6, paragraph 43) which is then polished in order to expose conductive portions (153a) of the electrode substrate (143c) and obtain a desired thickness of each layer. Therefore, one having ordinary skill in the art would have found it obvious to modify the thickness of each layer by modifying the polishing rate to obtain a predetermined height difference between the surface of the conductive pattern and the surface of the insulating resin according to process requirements. In addition, a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. MPEP 2144.05 II. B.

With regard to claim 4, Masato teaches wherein the lands comprise deburred/flushed lands (page 2, paragraph 9).

With regard to claim 8, Masato discloses wherein the lands have rounded edges (concavities and convexities may be present - page 7, paragraph 46).

With regard to claim 9, even though Masato fails to explicitly teach wherein the conductive pattern reproduced on a work piece is free of groove separation breaks/defects, Masato teaches wherein such electrode tool will provide high precision machining products while increasing productivity (page 7, paragraphs 50 and 52). In addition, since the electrode tool (143) taught Masato meets the structural limitations of the instant invention, it would have also been expected that the conductive pattern reproduced on a workpiece would be free from defects.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masato in view of Kobayashi (JP 2003-340648).

With regard to claim 3, Masato teaches all of the limitations as discussed above in claim 1 wherein the insulation layer comprises an epoxy resin (page 6, paragraph 43) but fails to teach wherein the electrode substrate comprises one of brass and austenitic stainless steel.

Kobayashi teaches an electrode tool for electrochemical machining (abstract; page 2, paragraph 1) wherein the conductive substrate of the electrode tool comprises austenitic stainless steel (see claim 4) in order to maintain the machining of depressions for dynamic grooves or the like at a high precision over a long period of time (page 3, paragraphs 17-18). Therefore, one having ordinary skill in the art would have found it

obvious to use austenitic stainless steel as the electrode substrate, as taught by Kobayashi, in the electrode tool of Masato, in order to maintain the machining at a high precision over a long period of time.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Tuesday-Friday from 9am to 7pm.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. M./
Examiner, Art Unit 1795

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795